

REMARKS/ARGUMENTS

A Second Supplemental Information Disclosure Statement is submitted herewith with copies of the Furozono reference (New Development Trend of Intelligent Material/Technology-Chapter 5: Percutaneous device) and the Furozono 130 reference (Development of Bio-interface Consisting of Nano-Scaled Hydroxyapatite and Polymer Fibers via Covalent Linkage for Implant Materials, P. 130). The copies of these references submitted with the Second Information Disclosure Statement identify the publication date of Furozono as April 30, 2003, and the publication date of Furozono 130 as May 19-24, 2003.

Claims 1-18 stand rejected under 35 U.S.C. 102(b) as being anticipated by Furozono. Since the priority dates of May 30, 2002 and April 25, 2003 of the present application precede the publication date of April 30, 2003 of the Furozono publication, it is submitted that this publication is not available as a reference against claims 1-18 in the present application. Accordingly, this rejection should be withdrawn.

Claims 1-12 and 18 stand rejected under 35 U.S.C. 102(b) as being anticipated by Furozono 130. Since the priority dates of May 30, 2002 and April 25, 2003 of the present application precede the publication date of May 19-24, 2003 of the Furozono 130 publication, it is submitted that this publication is not available as a reference against claims 1-12 and 18 in the present application. Accordingly, this rejection should be withdrawn.

Claims 13-17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over JP 511 (JP 2001-172511) in view of Furozono 130. Since the Furozono 130 publication is not available as a reference against claims 13-17 of the present application, this rejection should be withdrawn by the Examiner.

The teachings of JP 511 taken alone clearly fail to render obvious the novel recitations in claims 13-17. These claims are all dependent on new claim 20 and recite a medical material made of a hydroxyapatite complex in which a hydroxyapatite sintered compact and a polymer-based material containing an alkoxysilyl group are chemically bonded.

In contrast, JP 511 performs a modification of hydroxyapatite complex by using KBE903, in other words, 3-aminopropyltriethoxysilane. Therefore, the calcium phosphate-polymer complex in JP 511 has a structure in which X is the hydroxyapatite and Y is the polymer-based material. Since the hydroxyapatite complex of the present invention and the hydroxyapatite complex of JP 511 are completely different in their structures, claims 13-17 should be allowable over the teachings of JP 511.

Claims 10 and 12-17 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for the reason that it is not clear what "a molecular chain" refers to. Claim 10 has been cancelled and replaced by new claim 19; and claim 12 has been cancelled and replaced by new claim 20. Claims 13-17 have been amended to depend from new claim 20.

In new claims 19 and 20, the wording "molecular chain" has been omitted and has been replaced by the formula 1 (set forth on page 28 of the specification). This amendment is supported by the disclosure on page 27, line 25 to page 28, line 10 of the specification.

The hydroxyapatite complex of the present invention has a structure such that a hydroxyapatite sintered compact is chemically bonded to the surface of a polymer-based material. The present invention discloses, as a concrete example, a hydroxyapatite complex in which a hydroxyl group (-OH) included in a hydroxyapatite sintered compact and an isocyanate group (-NCO) included in the polymer-based material are directly bonded in a chemical manner (Page 27, lines 29-32 of the specification). Further, $-\text{Si} \equiv (\text{OR})_3$ is taught in the specification as an

example of alkoxysilyl group. The specification also states that, in the case of using $-\text{Si} \equiv (\text{OR})_3$, as an alkoxysilyl group, three hydroxyl groups of the hydroxyapatite sintered compact are bonded to a single $-\text{Si} \equiv (\text{OR})_3$ contained in the polymer-based material, and the bond expressed by the chemical formula (1) exists between the hydroxyapatite sintered compact and the polymer-based material (Page 28, lines 1-10 of the specification).


That is, the chemical formula (1) indicates a structure of a hydroxyapatite complex wherein the alkoxysilyl group of the polymer-based material is $-\text{Si} \equiv (\text{OR})_3$. New claims 19 and 20 both recite a hydroxyapatite complex comprising the structure expressed by the chemical formula (1).

Accordingly, the rejection under 35 U.S.C. §112 should now be withdrawn.

In view of the above amendments and remarks, it is submitted that claims 1-9, 11 and 13-20, as amended herein, should be allowable to Applicants. Formal allowance of these claims is earnestly solicited.

Respectfully submitted,

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